

## REMARKS/ARGUMENTS

### Information Disclosure Statements

The Examiner basically objects to the number of documents cited in the IDSs filed in this application since apparently there are too many to be fully considered "in the time allotted for examination." The Examiner requests the applicant to identify the 20 "most relevant references that contain subject matter closest to the claimed invention."

The Examiner's request poses several issues for the patent applicant.

First, the Court which decides most patent cases, namely the Court of Appeals for the Federal Circuit (CAFC), has issued instructions which seem to be directly contrary to the request made by the Examiner.

The Examiner, and indeed the Patent Office also as a whole, is respectfully reminded that applicants may have to provide a non-trivial number of references in accordance with the duty of disclosure that is ultimately defined not by the Office's standard of materiality as set forth in 37 C.F.R. § 1.56(b) but by the standard set by the CAFC: "information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent." *Cargill, Inc. v. Canba Foods, Ltd.*, 476 F.3d 1359, 1364, 81 U.S.P.Q. 2d 1705 (Fed. Cir. 2007) (quoting 37 C.F.R. 31.56(a) (1991)). The CAFC has recently reminded applicants of its "policy that 'applicants [should] continue to submit information for consideration by the Office in applications rather than making and relying on their own determinations of materiality.'" *Id.* at 1367 (quoting *Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1257, 43 U.S.P.Q. 2d 1666 (Fed. Cir. 1997), cert. denied, 523 U.S. 1071 (1998)).

The policy of the CAFC is that applicants are not to rely on their own determinations as to what art is more material and what art is less material.

Applicants should therefore err on the side of disclosure or face that possibility of a charge of inequitable conduct in later litigation. So if applicants are not supposed to rely on such determinations, how can applicants possibly induce patent examiners to rely on such determinations by flagging one document as allegedly being more relevant than another?

And there are many good reasons for the policy enunciated by the CAFC. The undersigned has certainly seen Examiners cite art against claims which the undersigned has found not to be very relevant. Indeed, in this very application the Examiner will be advised why the Applicant disagrees with the relevance that the Examiner ascribes to the cited art. But assuming the Examiner in this application is a 'reasonable examiner' as envisioned by the CAFC, and since the Examiner cited Mizrahi, for example, then it is the sort of document that should be cited in an IDS even though the applicant does not believe it to be particularly relevant (for reasons which will be discussed below). Also, the undersigned has seen Examiners cite art which the undersigned would have believed not to be relevant, based on his own understanding of an invention, only to have the Examiner point out why the claims were too broad because the Examiner construed the claims in a manner quite unanticipated by the undersigned. So exactly how is an applicant or a patent attorney supposed to discern, in advance, exactly which documents are relevant in the mind of a reasonable examiner? There is no "reasonable Examiner" litmus paper or crystal ball available to applicants and their patent attorneys! Since applicants cannot successfully discern, in advance, exactly which documents are relevant in the mind of a reasonable examiner, a policy has been promulgated by the CAFC that applicants should not even try to do that.

Anyway, since the CAFC has already given guidance on this issue, and since neither the applicant nor the Examiner is in a position to overrule the

CAFC, the USPTO, if it wants to see some other test for the submission of prior art, should have Congress overrule the CAFC by passing appropriate legislation. But until that occurs, perhaps we should just abide by the policy established by the CAFC. If the Examiner needs more time to consider the prior art then the Examiner is encouraged to get his supervisors to allow him to spend the time needed. The USPTO should not think of itself as being a widget factory where each widget is allotted some fixed amount of time to be produced.

Second, how is anyone supposed to determine reliably what art is the "most relevant" to the invention? The "invention" in, this case, is presented by 37 different claims! Note how the Examiner applied the prior art in the Official Action. Is any one of the several cited references the very most relevant reference to the "invention"? And if no single reference is the "most relevant" how is anyone supposed to figure out which references cited by the applicant might fall into the magic "top twenty" category? It would make more sense to post this information on the Internet and ask for a popular vote. At least then applicants would not live in fear of being accused of misleading the USPTO by selecting the documents they might think are the most interesting.

Anyway, the applicant respectfully declines to do that which the CAFC has made clear that an Applicant should not do.

### **The Prior Art Rejections**

#### **Claims 1, 6 and 11**

The Examiner asserts that the patent by Mizrahi anticipates the elements of claims 1, 6 and 11. However, the Examiner mistakenly identifies element 50 shown in Figures 2 and 5 of Mizrahi as being an optical modulator. Element 50 is not an optical modulator, rather it is an optical amplifier. And an optical

amplifier is not an optical modulator! Indeed, an optical modulator is shown in Mizrahi as item 26 of Figure 3 in Mizrahi.

It is evident from the text (Column 5, lines 23-24 and 39-64; Column 6, lines 6-19), which describes the modulator in more detail, that Mizrahi's modulator 26 is not the same as Mizrahi's optical amplifier 50.

The Examiner also asserts that Mizrahi has a feedback loop that connects from tap 221 (of Figure 5) back to an input for the optical modulator. However, according to the text associated with that figure (Column 14, lines 46-52 and Column 6, line 64 to Column 7, line 17) the feedback signal is used to calibrate a laser transmitter, one of which is depicted in Figure 3. Figure 3 shows a feedback signal as being supplied to control its laser 22 and NOT to control its modulator 26.

Thus, Mizrahi does not have "an optical modulator arranged in a feedback loop" as required by claim 1.

Regarding claim 6, the Examiner states that the optical tap 221 is wavelength selective. However, those taps in Mizrahi are NOT wavelength selective. There is no indication of wavelength selectivity for those taps 21 and 221. Instead, any wavelength selectivity is provided by gratings 25 and by gratings 222-225, which are separate from taps 21 and 221.

Regarding claim 11, the Examiner states that some wavelength selective optical tap of Mizrahi directs the wavelength selected light into different ones of optical channels 161, 165 of the feedback loop. However, Figure 5 of Mizrahi shows the tap 221 as being inside of amplifier 50' (and not separate from it). Also, the channels 161 and 165 are coupled to interconnection element 80 and interference filter 82 rather than to tap 221. We note that interference filter 82 (described in Column 10, lines 37-42) could function as a wavelength selective optical tap. Nevertheless, the feedback path connected to channels 161, 165 (via

node control processor 142 or 140) is used to control the laser 22 and not an optical modulator.

Claims 2, 7 and 11

Regarding claims 2, 7 and 11, the Examiner cites a patent by Desurvire as describing a plurality of optical delay lines (delay 115, 116, 117, 118 of Figure 1 in Desurvire). However, those delay lines are electrical lines and are not optical lines. This is evident from the accompanying text in Column 4, lines 10-27. Instead, the optical paths are from splitter 105, through optical gates 111-114 and to photodiodes 119-122. The optical gates 111-114 may open and close at different times to thereby modulate or switch the optical signal, but that is very different from imposing different amounts of delay on an optical signal. Anyway, given these mischaracterizations of both Mizrahi and Desurvire it seems rather pointless, with all due respect, to get into a discussion of whether or not it would have been obvious to combine one mischaracterized reference with another mischaracterized reference.

Claims 3, 8 and 13

Regarding claims 3, 8 and 13, the Examiner mistakenly asserts that the feedback loop of Mizrahi includes an amplifier. However, according to the cited text in Column 10, lines 17-27, the amplifiers which occur in amplifier module 50 (see Figure 2) are not part of the feedback loop. Those amplifiers (52, 54) are apparently the only elements that provide gain. Instead, the feedback loop is used to control the laser transmitters. So exactly what elements in the feedback loop, whether optical or electrical, are supposed to be amplifiers? Please be specific.

In this connection the Examiner's attention is respectfully directed to the obligations set forth in 37 CFR 1.104 in terms of reading a claim on a prior art reference. The Examiner is supposed to identify the portions of the prior art relied upon as nearly as practicable. Using reference numerals would be both very helpful in understanding the Examiner's comments and, with all due respect, would go a long way towards rule compliance.

Claims 14 and 16

Regarding claims 14 and 16, the Examiner mistakenly asserts that elements 53 and 55 of Figures 2 and 5 are optical amplifiers. However, 53 and 55 are pump lasers (see Column 9, lines 43-51). Instead, elements 52 and 54 are the optical amplifier stages in amplifier module 50'.

Claims 5, 10 and 17

Regarding claims 5, 10 and 17, the Examiner states that the electrical inputs to optical gates 127-130 of Desurvire are the same as the electrical inputs to the claimed optical modulator. However, these multiple optical gates are not the same as claimed optical modulator. More importantly, the optical gates are not bandpass filters, as incorrectly asserted by the Examiner. A bandpass filter operates in the frequency or wavelength domain whereas a gate operates (as a modulator or shutter) in the time domain. With all due respect, there is no basis for the assertion of "functional equivalence" made by the Examiner. If the Examiner is trying to make use of the Fourier Transform theory, he is not doing it correctly. If the Examiner disagrees, then the Examiner can cite some prior art to support his contentions, or if his contentions are a matter of fact known to the Examiner, then the Examiner is respectfully requested to place this (and any other) factual assertion into affidavit format as required by 37 CFR 1.104.

Claims 24 and 31

Regarding claims 24 and 31, these claims have been amended to define therein what is a “multi-wavelength photonic oscillator” and these amendments should clearly define over the cited art.

In the discussion of these claims, the Examiner mistakenly concludes that the wavelength division multiplexer of the present disclosure actually creates multiple, differing frequencies from an optical input frequency. This is possibly why the Examiner states the Applicant’s wavelength division multiplexer is the same as the Raman Nath modulator (RMN1 in Figure 2) of Scarr. That modulator is an acousto-optic modulator that accepts an optical input and also an electrical, RF input. That modulator produces multiple optical outputs of differing frequencies (which result from modulating the optical input with the RF input). The output of the RNM has frequencies that are not already present in its optical input. In contrast, it is the multi-wavelength photonic oscillator of the present disclosure that produces the many differing frequencies of its optical output. The wavelength division multiplexer separates these frequencies into groups but it does not create any frequency that was not supplied to it from the multi-wavelength photonic oscillator. The amendments to claims 24 and 31 make this clear.

Claim 18

Regarding claim 18, the examiner continues to identify the RNM as a wavelength demultiplexer, but the RNM is a modulator (see discussion above). So the Applicant disagrees with the Examiner’s analysis. However, given the fact that claim 18 is dependent upon claim 1 it already patentably defines over

the prior art for that reason along, so there does not seem to be any particular reason to dwell on this issue.

Claims 18, 25 and 32

Regarding claims 18, 25 and 32, although it is common and well known (as noted by the Examiner) to use a pair of lasers to generate an optical heterodyne output suitable for generating a RF LO signal, the Examiner does not show how it would be common and well known to wavelength-associate each pair of slave lasers "with a laser of the plurality of lasers in the multi-wavelength photonic oscillator" as claimed. It is the "wavelength association" that is important here.

Claims 30 and 37

Regarding claims 30 and 37 (and claims 3, 8 and 13), the Examiner infers that the motivation for having a feedback loop, such as the one in the multi-wavelength photonic oscillator, is to stabilize the multi-wavelength photonic oscillator, by a "stabled feedback control system". However, if a loop has a loop gain that exceeds unity, as disclosed in the present application, that gain makes such a loop unstable and oscillate. Oscillation is desirable because the multi-wavelength photonic oscillator is an oscillator. Feedback loops are used in other applications to improve stability, but then they have a loop gain less than unity.

Allowable Subject Matter

The Examiner is thanked for the indication of allowable subject matter. Claims 26 and 33 have been rewritten in independent format with a very slight rewording of the claim in order to the "a particular one of" language which has also been added to claims 25 and 32 for clarity reasons.



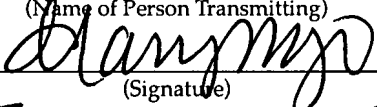
Withdrawal of the rejections and allowance of the claims are respectfully requested.

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The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

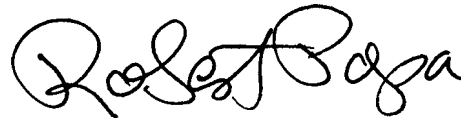
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(Date)

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